

The Examiner has rejected claims 9 and 11-17 on the Homme U.S. patent no. 3,113,017 and the Worthington U.S. patent no. 4,445,931. Claim 9 is as follows:

A method of producing Ti powder from a source of TiCl_4 vapor, comprising introducing the TiCl_4 vapor submerged in liquid Na or Na with an alkaline earth metal to reduce TiCl_4 to a Ti powder and the halide salts of the Na or alkaline earth metals present and separating the Ti powder from the combination of Ti powder and unreacted metal and salt.

Claim 13 is as follows:

A method of producing an elemental material or an alloy thereof from a chloride vapor of the elemental material or a mixture of halide vapors of two or more elemental materials comprising the steps of introducing the chloride vapor or mixture of chloride vapors into a reaction zone in the interior of a flowing stream of a liquid alkali metal, a liquid alkaline earth metal, or any mixture thereof; intimately mixing the chloride vapor or mixture of chloride vapors with the flowing metal stream to cause a reduction reaction therebetween and form the elemental material or alloy thereof and a salt of the alkali metal, the alkaline earth metal, or any mixture thereof; and separating the elemental material or alloy thereof from the salt and unreacted metal.

The feature of claim 9 which is neither shown nor suggested in either the Homme or Worthington patent is "introducing the TiCl_4 vapor submerged in liquid sodium or sodium with an alkaline earth metal and in claim 13, the reference do not show or suggest "introducing the chloride vapor or mixture of chloride vapors into a reaction zone in the interior of a flowing stream of a liquid alkali metal, ...".

The Homme patent shows a method of making titanium by reacting titanium chloride with an alkali metal. The alkali metal in liquid form is introduced into the top of reaction vessel 1 through inlet pipes 23 and 24 where the liquid falls into the large reactor chamber 1. Titanium tetrachloride as a vapor is introduced through standpipe 30 as can be seen from reference to figure 1 of the Homme patent, the titanium tetrachloride vapor entering the reaction chamber 1 through standpipe 30 at most contacts the outside of the liquid alkali metal being introduced through inlet pipes 23 and 24. The contact between the titanium tetrachloride vapor and the alkali metal is a surface contact. There is no teaching or suggestion, nor could there be, of introducing the titanium tetrachloride vapor "submerged in liquid sodium" as required in claim 9 or "introducing the chloride vapor or mixture of chloride vapors into a reaction zone in the interior of a flowing stream of a liquid alkali metal" as required in claim 13. Accordingly, the Homme patent is clearly insufficient on which to reject claims 9 and 11-17.

The Worthington patent as stated in the abstract and in the disclosure shows a reaction of titanium tetrachloride vapor with a fine spray of molten sodium. The disclosure shows that the sodium is introduced via an atomizing nozzle 4, see the figure of the drawings and column 2, lines 17-20. As seen, the titanium tetrachloride 5 exist in the reactor as liquid and is heated by heating element 8 to vaporize the titanium tetrachloride. Therefore, the only reaction between the sodium and the titanium tetrachloride vapor is the contact between the atomized sodium introduced from the spray head 4 and the vapor boiling off of the titanium tetrachloride 5. Clearly, the Worthington patent does not show or suggest any structure much less teach the inventions described in independent claims 9 and 13. Moreover, neither the Worthington patent nor the Homme patent teach any structure which could be used to

practice the invention claimed in claims 9 and 11-17.

For the foregoing reasons, it is believed that claims 9 and 11-17 clearly define the inventive subject matter with respect to the Homme and Worthington patents and should be allowed.

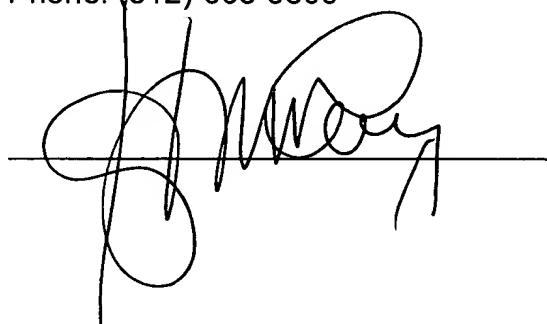
An Information Disclosure Statement is enclosed with this continuing application. None of the references is more pertinent than the references of record in the patent application.

In the event that the Examiner is not persuaded, he is requested to call the undersigned so that a notice of appeal may be timely filed.

Respectfully submitted,

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A handwritten signature in black ink, appearing to read 'H. M. Levy', is written over a horizontal line.